

A CAHNERS PUBLICATION

DATA[®]MATION

FOR MANAGERS OF INFORMATION TECHNOLOGY WORLDWIDE

APRIL 15, 1991

Bill Warner,
director for network
management,
IBM, with NetView



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1991

DATAMATION[®]

FOR MANAGERS OF INFORMATION TECHNOLOGY WORLDWIDE

VOLUME 37
NUMBER 8



The future holds dramatic changes for NetView, like abandoning its proprietary core architecture altogether.

COVER STORY

MANAGEMENT

NetView In The Open Era

28

BY SUSAN KERR IBM has started down the long and winding road of open systems with NetView. But the tiger will have to change a few stripes to be more than an SNA supermanager.

Cover photography by Wes Bobbitt

SPECIAL REPORT

BUDGET SURVEY

Budget Growth Skids To 3.4%

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BY JEFF MOAD

Recession, continued decentralization and skepticism over information technology's payoff have slowed 1991 budget growth dramatically.

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The Object Of Borland's Vision

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BY MIKE RICCIUTI

ObjectVision from Borland gives users the ability to develop Windows data entry applications as easily as writing a spreadsheet macro.

Borland's Garvey wants to see users develop applications.



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OS/2's Second Coming 49

BY JOHN McMULLEN The new OS/2 will arrive later this year with less fanfare than anticipated. With little chance of owning the desktop, version 2.0 nonetheless shows promise as a development platform and as a way to power up file servers.

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GE Spreads EDI Gospel 55

BY TOM McCUSKER General Electric Information Services is working with big companies to recruit the many small firms needed to make electronic data interchange practical.

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Enterprise Networks: One Step At A Time 60

BY MARK SCHLACK A new study of IS plans shows creeping networkism in big companies, with manufacturing firms taking the lead. Opening systems up will go hand in hand with cost-reduction measures.

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Tools To Automate Quality Production 63

BY JEFF MOAD All the talk on the factory floor is about "total quality production." But, when the talk turns to action, more often than not MIS is out of the room. These new quality automation applications could change all that soon.

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BY NED SNELL Multivendor shops provide users with application access from a legion of desktops. But users complain about keyboard and application inconsistency. Now what?

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BY DWIGHT B. DAVIS By mirroring business procedures and practices, workflow software helps to automate image routing and application and database access.



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Budgets: It May Not Be As Bad As It Looks

We've all heard employees complain about tight deadlines. The refrain is usually that too tight deadlines often make it difficult to produce quality products. However, intense deadlines often bring out the best in creativity, whatever the endeavor. That's because tough deadlines demand action. When the pressure's on, the well trained and experienced can take the right action.

When it comes to IS budgets, we think a similar dynamic is at work. Sure, it's tougher to operate when budgets stay flat, grow but slightly or are cut. And, yes, there is a point at which too much change can be deleterious to the organization and its goals. But there is also a vast middle ground where the right thinking can turn a tough budget situation into an opportunity for positive change. We think that IS organizations may be in this situation today. DATAMATION's latest budget survey in this issue's special report, "Budget Growth Skids To 3.4%," page 44, shows they face the smallest budget increase this year since we started the survey in 1985.

How so, you say? Well, with a 3.4% average increase in IS budgets, IS managers will be forced to take a hard look at all activities within their organizations. Base IS infrastructure, staffing levels, and current and new development projects will all have to be rigorously evaluated. What a good time to better align business goals with IS. What a good time to check to see if development projects really improve business processes. What a good time to invest in new, more efficient technologies. What a good time to really get that tight focus that we all talk about so much.

And there's another side to our budget survey this year that must be kept in mind. The survey, mailed in January to 6,000 IS managers across the United States and sent back by 550, was filled out just as the war in the Middle East was getting under way, recession fears were at a high pitch and consumer confidence was ebbing. Now that the war is over, there are signs that confidence is returning. We may not see the results of this return immediately, but over time business will begin to feel the effects. Meanwhile, keep the pressure on those budgets, and let the creativity flow.

A New, More Open Look For NetView

For the more than 10,000 computer sites that use IBM's NetView network management system, Big Blue's moves to open up this now proprietary system could have some very positive consequences. The prospect that NetView will be able to interoperate with multivendor equipment, as well as with voice and data devices that do not conform to IBM's System Network Architecture (SNA), will be music to the ears of IS managers struggling to connect disparate networks.

But, as contributing editor Susan Kerr writes in this issue's cover story, "NetView In The Open Era," page 28, the road to this open vision for NetView may not be an altogether smooth ride. "The future holds more dramatic changes for NetView. According to IBM executives, NetView will abandon its proprietary core architecture altogether. This will be a long, expensive path for IBM, and one pitted with potholes. For starters, as the world moves to a more distributed model of computing, NetView's hierarchical network management structure clashes with organizations that are moving away from mainframe-centered systems."

Nevertheless, the changes seem inexorable, and IS managers must plan for them. We hope our story helps you sort out the issues involved in doing so.



David R. Brousell

David R. Brousell, Editor

Coming Next Issue:

- Inside Pilot's PC-based executive information system
- A look at Intel's new supercomputer
- A roundup of Sun SPARC clones
- Imaging Part 3: forms processing

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Budget Growth Skids To 3.4%

Recession, continued decentralization and skepticism over information technology's payoff have slowed 1991 budget growth dramatically.

BY JEFF MOAD

To those information systems executives who were still clinging to the idea that IS budgets in the 1990s could retain their immunity from the economic effects of recession, war and corporate restructuring, the results of the 1990-1991 DATAMATION budget survey will be like a quick shot of cold reality.

Citing ongoing economic uncertainty, continuing corporate decentralization and a rising tide of upper management skepticism over the real benefits of information technology investments, IS executives said their overall budgets will grow a paltry 3.4% in 1991 more than their 1990 levels. That rate of increase is the smallest since DATAMATION began its annual budget surveys in 1985. IS saw a 5.9% overall

budget jump just last year.

Many IS leaders say this year's all-time low budget growth rate is a temporary condition, tied directly to uncertainty over the recession and the recent war in the Persian Gulf. In fact, some say that, until late last year, they had been expecting budget increases at least as large as last year's. But sliding revenue and profit projections, particularly in industries such as air travel, financial services and some segments of manufacturing, have sent IS executives back to the budget drawing boards.

"When we made out our annual budget last October and November, we were looking for substantial growth," says Tom Kiernan, president of the SABRE Computer Services division of American Airlines Inc. "Since then, that has been destroyed by events," as American, like all major international air carriers, had been rocked by customers' unwillingness to take to the skies during wartime, says Kiernan. Kiernan has since cut between 3 and 4% from American's projected IS budget growth. In particular, he has focused on cutting IS personnel expenses. Over the last three to four years, American has been increasing IS staffing by up to 30% per year in an attempt to keep up with growth and demand for new applications. But this year, says Kiernan, SABRE will keep head count growth to a minimum.

The Shrinkage Factor

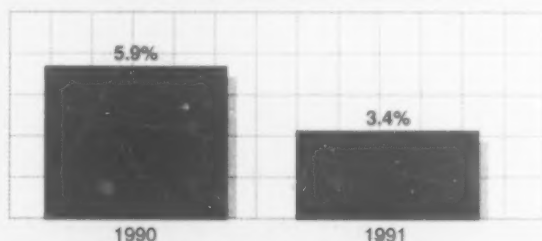
American is clearly not alone in looking to control IS spending by keeping a lid on personnel costs. IS executives surveyed by DATAMATION said the number of IS employees at their locations will increase by an average of less than 1% in 1991 over 1990's levels, to an average staff of 71. Overall spending on IS personnel will grow by only 3.9% in 1991.

Those figure are in sharp contrast to last year's, when IS executives told DATAMATION that their staffs would be growing by more than 13% over 1989 levels.

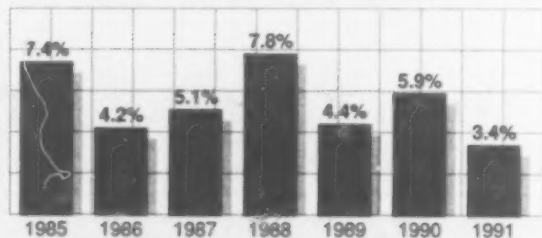
This year, those expecting IS department staffs to shrink most often cite budgetary squeezes, corporate consolidations and decentralization as the reasons.

Budget Increases Plummet Nearly 50%...

USER SPENDING ON INFORMATION SYSTEMS



As The Boom/Bust Cycle Continues



Source: DATAMATION

At paper manufacturer James River Corp. Of Virginia, all three factors have been at work within the last year, leading to a 25% reduction in central IS staffing. Not only has James River been consolidating, selling off some businesses and merging others, but the company's management last year also decided to consider outsourcing as a way to cut the cost of providing base IS services. According to MIS vice president Jim Miller, the Richmond, Va., company eventually decided to keep the IS utility function in house, but central IS was forced to reorganize and cut head count in order to reduce its costs to match those of the outsourcers.

IS's plans to cut back on staff growth will mean less mobility for IS workers and at least a temporary stall in many a climb up the IS career ladder. "At many companies, there's a freeze on everything," says Bob Reck, a vice president at the IS consulting firm Index Group Inc. in Cambridge, Mass. "And since very few IS people tend to move outside the IS function, that's going to mean a lot of the troops are going to become pretty irritable."

IS's plans to cap spending growth also extend to the purchase of products and services. IS executives surveyed said they don't plan to increase spending for any type of product or service more than 2.7% this year. On average, IS will increase spending on hardware products by 2.3%, networking products by 2.2% and software products by 2.7%. In an apparent blow to the outsourcing concept, IS executives said they'll be increasing spending on outside services by under 1% in 1991.

Besides cutting down on personnel spending, many IS operations seem to be targeting two other areas for savings: discretionary spending on some new application development projects and some expenses related to base IS infrastructure development.

At New York City-based insurance company Metropolitan Life & Affiliated Cos., for example, in addition to cutting back on hiring, IS is slowing the pace of its operating system migration from MS-DOS to OS/2 for its desktop workstations. Since OS/2 requires significantly more memory and often more expensive hardware and packaged applications, staying with MS-DOS longer will lead to a short-term savings.

"It's the kind of discretionary thing we can put off for a while, and [doing so] won't really hurt our business," says IS vice president Daniel Cavanagh.

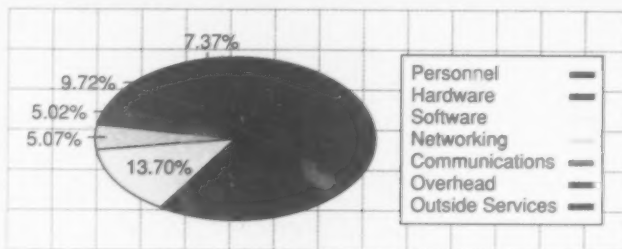
Cuts in discretionary spending are apparently affecting new PC installations. Respondents to the DATAMATION survey said that only 38.3% of the monies earmarked for PCs will be used to equip employees who previously had no desktop system. Last year, 42.2% of PC spending went for first-time users. A greater share of PC spending—23.3% versus 19.6%—will be for replacement machines this year.

IS organizations that provide IT support through service level agreements or on a transfer-pricing basis say their customers—business units and other users of IT services—have led the push to identify and reduce discretionary spending. Transfer pricing and service-level agreements, by which IS agrees to,

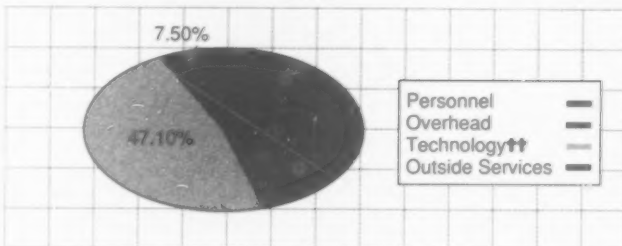
Where The Money Is Going

Technology continues to attract the largest part of IS budget dollars.*

1991



1990†



* Figures may not add up to 100% due to rounding

† 1990 figures are restated from last year's budget survey

** Technology in 1990 combined Hardware, Software, Networking and Communications

Source: DATAMATION

say, install a system or provide some level of service for an agreed upon price, require users of IS-supplied services to agree up front on what the IS organization will provide and how much it will charge users on an application-by-application basis. Such systems place the onus for justifying IT spending on the businesses that benefit from the applications. In tight budget times, say IS executives in such organizations, line managers begin to scrutinize proposed IS projects more closely.

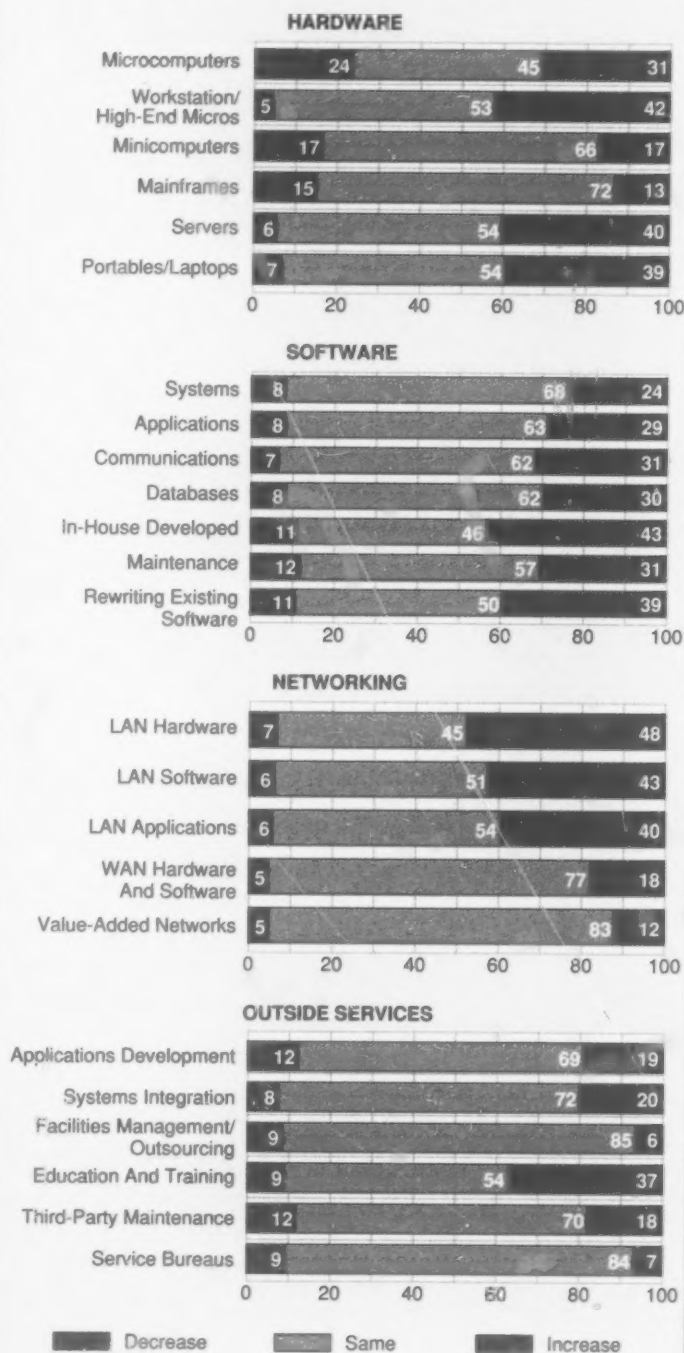
"We're getting into lengthier discussions with our business managers over the costs and benefits of particular projects," says SABRE's Kiernan, who introduced a transfer-pricing system to American Airlines two years ago. In the current environment marked by recession and the recent war, he says, those line managers connected with American's airline and customer reservation system (CRS) businesses, in particular, "are tending to compare the potential benefits of spending on technology with spending in other areas." That inevitably means some discretionary items get pushed down the priority list and deferred, says Kiernan.

Not that all spending on new applications is coming under the knife. Even hard-hit AMR Corp., American's parent, hasn't cut back on development in areas unconnected to the airline business. The company's AMR Information Services organization, for example, is continuing with a joint project to build a ticket reservation system for the French national railroad.

Despite cuts, some shops have continued with important new applications development.

The Choices In Hardware, Software

When asked whether they intend to spend more, less, or the same in 1991 as they did in 1990 on equipment, most IS shops said they plan to hold the line on spending this year.



Source: DATAMATION

And, elsewhere, companies are continuing to invest in new projects, particularly those that have the potential to open up new businesses and bring in revenue. At San Ramon, Calif.-based Pacific Bell Co., where IS is called on to participate in the development of new IT-based telecommunications products, as well as to provide base IT services, spending on new development is up nearly 20%, according to IS chief Jack Hancock. Not only is PacBell's IS department developing a large, new billing system for the company but it is also creating a set of electronic data interchange (EDI) services, which will be offered to PacBell customers.

An Emphasis On Networking

Such ongoing new development is generating IS interest in some key new technologies. In particular, respondents to the DATAMATION survey said they are focusing new spending on some closely linked technologies: local area networks, network management and client/server computing. Eighty-five percent of those answering the survey said they either currently use LANs or have budgeted for them in 1991, 60% said the same about network management products and 43% have implemented some form of client/server computing or plan to do so within the next 12 months.

Technologies that are currently low on the IS list of budget priorities include artificial intelligence, Integrated Services Digital Network (ISDN) products and X terminals.

In addition to cutting spending on some discretionary items, IS continues to focus on getting control of fixed-cost budget items, particularly those related to the kinds of base IS services typically provided by centralized data center operations. Many IS organizations have for the last couple of years been engaged in programs to centralize and automate data centers wherever possible in order to cut costs. That push is continuing.

"We've been involved in consolidating data centers and eliminating duplicate systems," says PacBell's Hancock. "But we feel significant improvements can still be made." In particular, says Hancock, PacBell is now focusing on improving software development methods by using computer-aided software engineering (CASE) techniques and tools in the data center. "We feel we can get better quality and have fewer programmers doing more work," says Hancock.

Although PacBell is increasing spending on product-oriented new development projects by 20% this year, efficiencies and cuts in base IS infrastructure costs will keep the overall IS spending increase at PacBell to about 5%, says Hancock.

Although ongoing data center consolidations may in some cases spur demand for ever larger mainframe systems and play into the hands of vendors like IBM, some IS executives say they may, at least temporarily, postpone purchases of new mainframes in light of the 1991 budget squeeze. "We're seeing a lot of people delaying putting in that new mainframe in addition to trimming staff," says Ben Parke, president of the IBM user group GUIDE Inter-

Since few people move outside IS, a lot of the troops are going to become pretty irritable.

national Corp. "This year, IS is being asked to take cuts just like everyone else in the company."

IS executives believe they aren't the only ones being asked to slow IT expenditure increases. Those surveyed by DATAMATION seemed to feel that many of the same dispersed business units that for the past few years have spent heavily on their own PC-based systems and support staff are also being reined in. IS executives, for example, said IT spending by non-IS organizations at their companies as a percentage of total IT spending would stay essentially unchanged from what it was in 1990, at about 20%. Respondents also said the number of full-time employees at their sites who carry out IS-like functions but do not report to IS also will also remain about the same this year as last. Surveyed IS executives said such employees average 37.5 in number, just over half the size of the average IS department.

Who Holds The Budget Strings?

Some observers, however, say they do not believe IT spending outside IS is as limited as respondents to the DATAMATION survey think it is. Nor are they as sure non-IS IT budgets are under as much pressure as are IS budgets.

"Glass house budgets may be up only 3%, but technology spending by the business units on things like outsourcing, consulting, factory floor automation, EDI, etc., are all zooming," insists Paul Strassman, former chief information officer at Xerox Corp. and currently an IS consultant and author. Strassman says IS executives at many companies have the authority to review business unit IT spending plans for adherence to corporate standards. But, he contends, "The role of MIS to act as a purchasing agent is diminishing."

In fact, experts like Ron Brzezinski, former CIO and current partner at Coopers & Lybrand, estimate

Only one in 10 companies knows their information technology costs or cost dynamics.

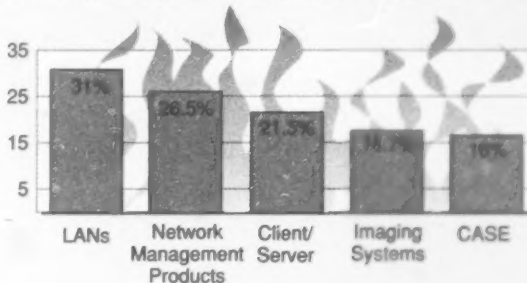
non-IS IT spending at closer to 50% of total corporate IT spending and growing.

The fact is, say an increasing number of experts, IS budgets may no longer be a very good reflection of total corporate IT spending. A recently published book by Peter Keen, executive director of the International Center For Information Technologies in Washington, D.C., for example, says most U.S. companies don't really have a handle on how much they spend on information technology, much less what kind of benefit they get from that money. Called *Shaping the Future: Business Design Through Information Technology*, Keen's book makes the startling claim that U.S. companies are actually spending upwards of 50% of their entire capital budgets on information technology, not the 32% figured by the Department of Commerce.

"Only one in 10 companies knows their IT costs

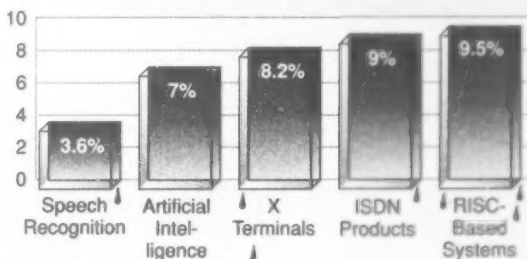
Hot Technologies For '91...

When asked which technologies they intended to spend money on in 1991, IS managers most often mentioned local area networks.



And Those Cooling Off

The fewest percentage of IS executives surveyed intend to spend money speech recognition technology in 1991.



Source: DATAMATION

or cost dynamics," claims Keen. CEOs, he says, sense that spending on IT has gotten out of control and has failed to deliver measurable benefits. One response is to slash IS budgets. But that doesn't address the real problem.

Some IS executives are attempting to reexert their influence over business unit IT spending. In at least a few cases, that has meant a reversal of recent trends toward decentralization.

Oakland, Calif.-based American President Cos. Ltd., for example, recently moved planning and budget responsibility for dispersed business unit IT spending back to central IS, in an effort to get a better grip on costs. With a few exceptions, CIO James Marston took control of IT and telecommunications spending and was able to reduce expenses on 39 different projects by renegotiating software licenses and maintenance contracts, among other things. Marston says that, so far, the move has saved the shipping company about \$3 million.

Despite the current pressures on spending, many executives believe the war's end and an economic recovery will prompt IS budget growth at least on a par with inflation. While a return to double-digit information systems budget growth is almost certainly not in the cards, a healthy economy could lead to sturdy 6 or 7% gains.

"Once the economy turns around, business will start looking to IS for applications," says GUIDE's Parke.

MARKET INSIGHTS

AN ANALYSIS OF ECONOMIC TRENDS

Cool Consumers Chill Out Computer Orders

BY MADELINE FRANCHI
Cahners Economics

Plunging business and consumer confidence in the early winter months of last year put a freeze on manufacturers of information systems equipment. New orders for computers, peripherals and communications equipment plummeted by 9.1% in a single month from October to November of last year, pulling down the annual order rate 1.8% below November 1989's level. And computer industry executives continue to cut back inventory levels. In November 1990, inventory in the IS industry weighed in at just \$20.9 billion—a drop of 7.8% from the same period of the previous year. That cut-back represented the largest year-to-year decline since the summer of 1986.

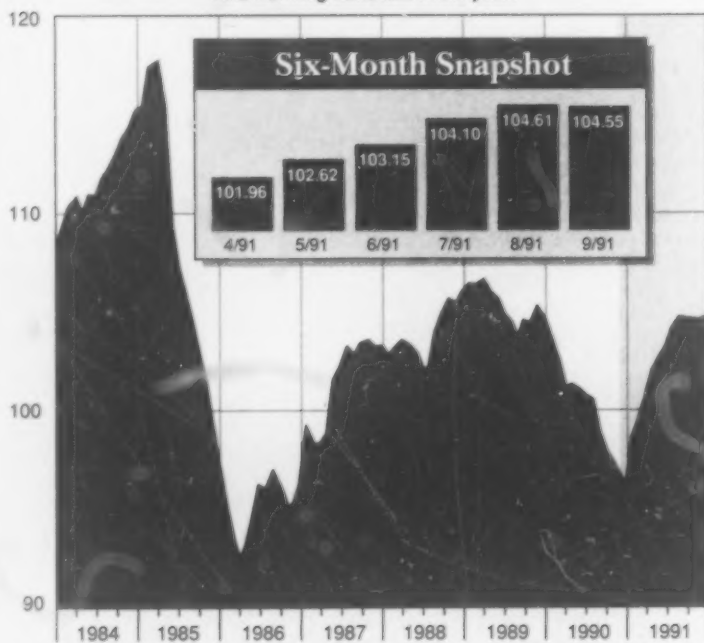
No wonder the DATAMATION Information Systems Performance Indicator (ISPI) continues to fall, down to 96.64 in November from 97.3 in October.

The present poor business investment climate remains a serious threat. Contracts and orders for new plant and equipment for all U.S. industries slumped by 10.2% from November 1989 to November 1990. In November alone, contracts and orders fell sharply to an annualized \$39.46 billion, the second lowest level since October 1988. Although one would think that as interest rates head down, business investment should show signs of revival, it hasn't happened that way yet. Cautious banks are counting every dollar they lend these days, and many industries are already overburdened by debt. That means the usual investment recovery that follows a slump may not be so swift or stunning, and the ISPI indicator could rise more slowly than expected.

For more information on Cahners Economics's forecasting services, including seminars, newsletters and database diskettes, call Dan Buchan at (617)-630-2105, fax him at (617)-630-2100 or write to him at Cahners Economics, 275 Washington St., Newton, MA 02158.

The IS Performance Indicator

Forecast for MIS: temperatures falling, but expect a mild warming trend late in the year.



*Shaded area denotes forecast

Source: Cahners Economics

	Nov. 1990	Oct. 1990	% Change 10/90-11/90	Nov. 1989	% Change 1989/1990
■ Information-Processing Equipment					
Shipments (SA, \$ billions)	9.72	10.55	-7.9	9.49	2.5
New Orders (SA, \$ billions)	9.46	10.41	-9.1	9.64	-1.8
Unfilled Orders (SA, \$ billions)	28.79	29.04	-0.9	28.58	0.7
Inventory (SA, \$ billions)	20.92	21.03	-0.6	22.69	-7.8
■ Computer Production Workers					
Employment (NSA, thousands)	270.5	271.4	-0.3	288.9	-6.4
Average Weekly Hours (monthly avg.)	42.1	41.6	1.2	42.3	-0.5
■ Stock Index					
S&P's Computer Systems Stock Price Index	165.23	154.36	7.0	170.35	-3.0
■ Contracts & Orders					
New Plant & Equipment (SA, \$ billions)	39.46	42.37	-6.9	43.93	-10.2

SA= seasonally adjusted;
NSA= not seasonally adjusted

Source: U.S. Commerce Dept., Standard & Poor's;
forecasts: Cahners Economics

MARKET INSIGHTS

A SURVEY OF TECHNOLOGY TRENDS

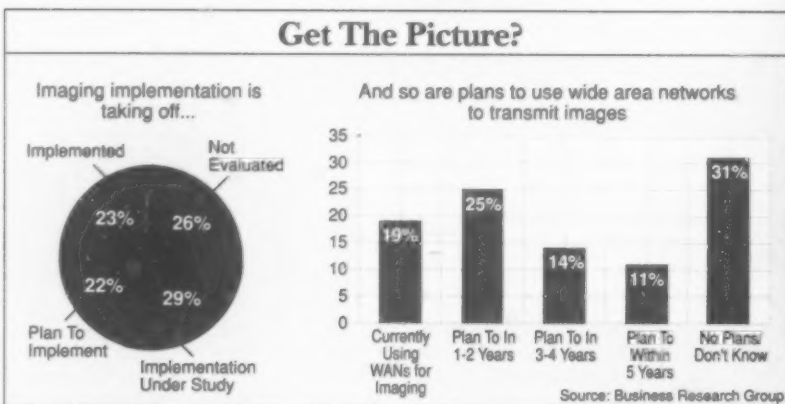
Users Bring Imaging Into Fast Focus

BY WARREN CHILDS
Business Research Group

The latest survey of the DATAMATION Technology Panel reveals that end users are moving quickly to implement imaging applications and that growth in these markets should remain strong in the future.

Nearly a quarter of our panel members indicate their companies have already implemented imaging applications; an additional 22% are planning to implement such applications over the next two years. Another 29% say they are studying the possibility of implementing imaging, and only 26% of panel members are not evaluating the technology at all. Just two months ago, only 14% said they had already implemented imaging technology, and 35% said they had no plans to implement it.

Imaging systems, which store documents directly as image data rather than as text data, are becoming increasingly attractive as a way to reduce the time, space and cost involved in filing and re-



trieving documents. Documents scanned from paper or created directly at a workstation can be stored on a compact disc, read only memory (CD-ROM) at the network server for quick retrieval by authorized users.

Another emerging use for imaging technology, which is growing in popularity, is for multimedia applications. Using a PC and CD-ROM hardware, multimedia users can access data from reference documents such as encyclopedias or maintenance manuals that could include sound and animation, as well as text and images.

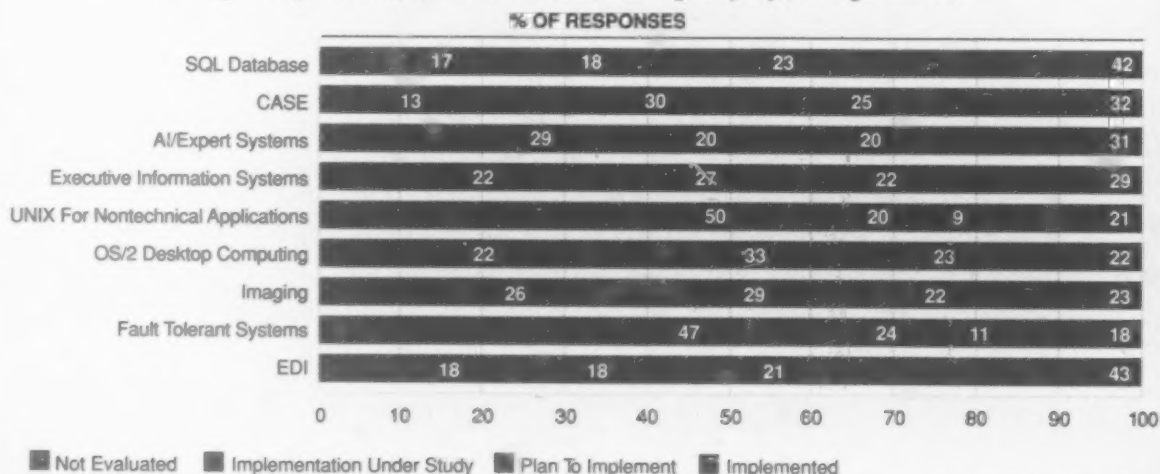
The rising popularity of imaging tech-

nology, combined with the increased use of videoconferencing and distributed processing, is driving companies to increase the bandwidth available over both local and wide area networks in order to enable them to transmit this wide-ranging assortment of image data over long distances. Some 44% of our panel members say their companies are already transmitting images over WANs or will be within the next two years.

For more information, call Nancy Finn at (617)-964-6204, fax her at (617)-558-4402 or write to her at the Business Research Group, 275 Washington Street, Newton, MA 02158.

DATAMATION's Technology Implementation Index: Systems And Software

DATAMATION each month surveys a select group of its readers — the DATAMATION/Technology Panel — to investigate the implementation of new technologies by key user organizations.



COMPANY INDEX

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